

sequence, a common first part and a random second part. The method can further include, at **820**, initiating transmission of the uplink sequence to the access point.

[0079] The common first part can be a sequence common to at least one other access point than the access point, while the random second part can be a sequence that is different from a corresponding sequence in all other access points in a group of access points including the access point. The group can include more than one access point up to all the access points in the network. Alternatively, the group can include all of the access points within a geographic region.

[0080] The uplink sequence can be transmitted in the radio resource central resource blocks in the last symbol of sub-frame 1, as shown in FIG. 4.

[0081] The method can also include, at **817**, including in the uplink sequence a third part, wherein the third part comprises a sequence that is common to a plurality of access points but not common to all access points.

[0082] The method can also include, at **830**, transmitting the uplink sequence to the access point. The method can further include, at **840**, transmitting a modified uplink sequence to the access point.

[0083] One having ordinary skill in the art will readily understand that the invention as discussed above may be practiced with steps in a different order, and/or with hardware elements in configurations which are different than those which are disclosed. Therefore, although the invention has been described based upon these preferred embodiments, it would be apparent to those of skill in the art that certain modifications, variations, and alternative constructions would be apparent, while remaining within the spirit and scope of the invention. In order to determine the metes and bounds of the invention, therefore, reference should be made to the appended claims.

GLOSSARY OF ABBREVIATIONS

- [0084]** ICI Inter-cell interference
- [0085]** LTE-LAN LTE local area network
- [0086]** LA local area
- [0087]** DL Downlink
- [0088]** UL Uplink
- [0089]** MeNB Macro eNB
- [0090]** GPS Global positioning system
- [0091]** Hetnet Heterogeneous Network
- [0092]** TTI Transmission Time Interval
- [0093]** DMRS Demodulation Reference Signal
- [0094]** SRS Sounding reference signal
- [0095]** PATI Portable AP Temporary ID
- [0096]** PAGI Portable AP Group ID
- [0097]** PDSCH Physical downlink shared channel
- [0098]** PUSCH Physical uplink shared channel
- [0099]** AP Access Point

1-28. (canceled)

29. A method, comprising:

measuring, with a first local access point, a first power of a first uplink sequence and a second power of a second uplink sequence from at least one user equipment; and determining that the first local access point and a second local access point are interfering with one another based on a comparison of the first power and the second power.

30. The method of claim **29**, further comprising:

initially partitioning the first local access point and the second local access point into a candidate group based on the comparison of the first power and the second power.

31. The method of claim **30**, wherein the initially partitioning is based on a comparison between a first difference in power between the first sequence and the second sequence from the first local access point and a second difference in power between a third sequence and a fourth sequence from the second local access point.

32. The method of claim **29**, further comprising:

soliciting a first modified uplink sequence for the first local access point and a second modified uplink sequence for the second local access point, based on the comparison of the first power and the second power.

33. A method, comprising:

preparing an uplink sequence for transmission from a user equipment to an access point; including in the uplink sequence, a common first part and a random second part; and initiating transmission of the uplink sequence to the access point.

34. The method of claim **33**, wherein the including the common first part comprises including a sequence common to at least one other access point than the access point.

35. The method of claim **33**, wherein the including the random second part comprises including a sequence that is different from a corresponding sequence in all other access points in a group of access points including the access point.

36. The method of claim **33**, wherein the initiating transmission of the uplink sequence to the access point comprises initiating transmission of the radio resource central resource blocks in the last symbol of subframe 1.

37. The method of claim **33**, further comprising:

including in the uplink sequence a third part, wherein the third part comprises a sequence that is common to a plurality of access points but not common to all access points.

38. A non-transitory computer-readable medium encoded with instructions that, when performed in hardware, perform a process, the process comprising:

measuring, with a first local access point, a first power of a first uplink sequence and a second power of a second uplink sequence from at least one user equipment; and determining that the first local access point and a second local access point are interfering with one another based on a comparison of the first power and the second power.

39. An apparatus, comprising:

at least one processor; and at least one memory including computer program code, wherein the at least one memory and the computer program code are configured to, with the at least one processor, cause the apparatus at least to measure, with a first local access point, a first power of a first uplink sequence and a second power of a second uplink sequence from at least one user equipment; and determine that the first local access point and a second local access point are interfering with one another based on a comparison of the first power and the second power.

40. The apparatus of claim **39**, wherein the at least one memory and the computer program code are also configured to, with the at least one processor, cause the apparatus at least to initially partition the first local access point and the second